

SEQUENCE LISTING



<110> BERCHTOLD, Peter
ESCHER, Robert F.A.

<120> Anti-GPIIB/IIIA Recombinant Antibodies

<130> 100564-09049

<140> US 09/424,840

<141> 1999-12-03

<150> DE 19723904.8

<151> 1997-06-06

<150> DE 19755227.7

<151> 1997-12-12

<150> DE 19820663.1

<151> 1998-05-08

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<170> PatentIn Ver. 2.1

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acc ctg tcc ctc aac tgc act gtc tct ggt cgc tcc atc agt ggt tac 96
Thr Leu Ser Leu Asn Cys Thr Val Ser Gly Arg Ser Ile Ser Gly Tyr
20 25 30

tct tgg aga tgg atc cgg cag tct cca ggg aag gga cta gag tgg att 144
Ser Trp Arg Trp Ile Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

ggg gat atc tct tat agt ggg agt acc aag tac aaa ccc tcc ctc agg 192
Gly Asp Ile Ser Tyr Ser Gly Ser Thr Lys Tyr Lys Pro Ser Leu Arg
50 55 60

agt cga gtc acc ctg tca gta gac acg tcc aag aac cag ttc tcc ctg 240
Ser Arg Val Thr Leu Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu
65 70 75 80

aag ctg aat tcg gtg acc gct gcg gac acg gcc gtc tat tac tgt gcg 288
Lys Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

cga gtc ttg ccc ttt gac ccg atc tcg atg gac gtc tgg ggc aaa ggg 336

Arg Val Leu Pro Phe Asp Pro Ile Ser Met Asp Val Trp Gly Lys Gly
 100 105 110

357

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Ser Trp Arg Trp Ile Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45

Gly Asp Ile Ser Tyr Ser Gly Ser Thr Lys Tyr Lys Pro Ser Leu Arg
 50 55 60

Ser Arg Val Thr Leu Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu
 65 70 75 80

Lys Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
 85 90 95

Arg Val Leu Pro Phe Asp Pro Ile Ser Met Asp Val Trp Gly Lys Gly
 100 105 110

Thr Thr Val Thr Val Ser Ser
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acc atc tct tgt tct ggg agc agc tcc aac atc aga agt aat cct gtt 96
 Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Arg Ser Asn Pro Val
 20 25 30

agc tgg tat cac cag gtc cca ggc acg gcc ccc aaa ctc ctc atc ttt 144
 Ser Trp Tyr His Gln Val Pro Gly Thr Ala Pro Lys Leu Leu Ile Phe

35	40	45	
ggt agt cat cag cgg ccc tca ggg gtc cct gac cga ttc tct ggc tcc			192
Gly Ser His Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser Gly Ser			
50	55	60	
aag tcg ggc acc tcc gcc tcc ctg gcc atc cgt ggg ctc caa tct ggg			240
Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Arg Gly Leu Gln Ser Gly			
65	70	75	80
gat gct ggt gac tat tac tgt gca aca tgg gat gac ggc ctc aat ggt			288
Asp Ala Gly Asp Tyr Tyr Cys Ala Thr Trp Asp Asp Gly Leu Asn Gly			
	85	90	95
ccg gtg ttc ggc gga ggg acc aag ctg acc gtc cta agt cag ccc			333
Pro Val Phe Gly Gly Thr Lys Leu Thr Val Leu Ser Gln Pro			
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	20	25	
Ser Trp Tyr His Gln Val Pro Gly Thr Ala Pro Lys Leu Leu Ile Phe			45
	35	40	
Gly Ser His Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser Gly Ser			60
	50	55	
Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Arg Gly Leu Gln Ser Gly			80
	65	70	75
Asp Ala Gly Asp Tyr Tyr Cys Ala Thr Trp Asp Asp Gly Leu Asn Gly			95
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr				
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gct atg cac tgg gtc cgc cag gct cca ggc aag ggg ctg gag tgg gtg				144
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val				
35		40	45	
gca gtt ata tca tat gat gga agc aat aaa tac tac gca gac tcc gtg				192
Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val				
50		55	60	
aag ggc cga ttc gcc atc tcc aga gac aat tcc aag aac acg ctg tat				240
Lys Gly Arg Phe Ala Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr				
65		70	75	80
ctg caa atg aac agc ctg aga gct gag gac acg gct gtg tat tac tgt				288
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys				
85		90	95	
wcgc aga gcg ctg ggg agc tgg ggg ggt tgg gac cac tac atg gac gtc				336
Ala Arg Ala Leu Gly Ser Trp Gly Gly Trp Asp His Tyr Met Asp Val				
100		105	110	
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Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser				
115		120		

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 <213> Homo sapiens

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Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val				45
35		40		
Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val				60
50		55		
Lys Gly Arg Phe Ala Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr				80
65		70		
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys				95
85		90		
Ala Arg Ala Leu Gly Ser Trp Gly Gly Trp Asp His Tyr Met Asp Val				110
100		105		
Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser				
115		120		

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<220>
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 Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn Thr Val
 20 25 30
 aac tgg tac cag cag ctc cca gga acg gcc ccc aaa ctc ctc atc tat 144
 Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr
 35 40 45
 agt aat aat cag cgg ccc tca ggg gtc cct gac cga ttc tct ggc tcc 192
 Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser Gly Ser
 50 55 60
 aag tct ggc acc tca gcc tcc ctg gcc atc agt ggg ctc cag tct gag 240
 Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln Ser Glu
 65 70 75 80
 gat gag gct gat tat tac tgt gca gca tgg gat gac agc ctg aat ggt 288
 Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu Asn Gly
 85 90 95
 tgg gtg ttc ggc gga ggg acc aag ctg acc gtc cta ggt cag ccc 333
 Trp Val Phe Gly Gly Thr Lys Leu Thr Val Leu Gly Gln Pro
 100 105 110

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 20 25 30
 Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr
 35 40 45
 Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser Gly Ser
 50 55 60

Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln Ser Glu
 65 70 75 80
 Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu Asn Gly
 85 90 95
 Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gln Pro
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 tcc ctg aga ctc tct tgt gca gcc tct gga ttt acg ttt gac aac ttt 96
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asn Phe
 20 25 30
 gcc atg agc tgg gtc cgc cag gct cca ggg aag ggg ctg gag tgg gtc 144
 Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 tca ggc att agt ggt ggt ggt ctt ttg aca cac tac gca gac tcc gtg 192
 Ser Gly Ile Ser Gly Gly Gly Leu Leu Thr His Tyr Ala Asp Ser Val
 50 55 60
 aag ggc cgg ttc acc atc tcc aga aac aat tcc agg aac act gta tac 240
 Lys Gly Arg Phe Thr Ile Ser Arg Asn Asn Ser Arg Asn Thr Val Tyr
 65 70 75 80
 cta caa atg aac agc ctg aga gcc gaa gac acg gcc gtg tat tat tgt 288
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 gtg aga gat ctg ggc tat aga gta ctt tcg act ttt act ttt gat atc 336
 Val Arg Asp Leu Gly Tyr Arg Val Leu Ser Thr Phe Thr Phe Asp Ile
 100 105 110
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 Trp Gly Gln Gly Thr Lys Val Thr Val Ser Ser
 115 120

<210> 10
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 <212> PRT
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<400> 10

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 Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ser Gly Ile Ser Gly Gly Gly Leu Leu Thr His Tyr Ala Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Thr Ile Ser Arg Asn Asn Ser Arg Asn Thr Val Tyr
 65 70 75 80
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Val Arg Asp Leu Gly Tyr Arg Val Leu Ser Thr Phe Thr Phe Asp Ile
 100 105 110
 Trp Gly Gln Gly Thr Lys Val Thr Val Ser Ser
 115 120

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 acc atc tcc tgc act gga acc agc agt gct att ggg aat tat aac ttt 96
 Thr Ile Ser Cys Thr Gly Thr Ser Ser Ala Ile Gly Asn Tyr Asn Phe 30
 20 25
 gtc ccc tgg tac caa cag cac cca ggc aaa gcc ccc aaa ctc atg att 144
 Val Pro Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu Met Ile 45
 35 40
 tat gag ggc agt aag cgg ccc tca ggg gtt tct aat cgc ttc tct ggc 192
 Tyr Glu Gly Ser Lys Arg Pro Ser Gly Val Ser Asn Arg Phe Ser Gly 60
 50 55
 tcc aag tct ggc aac acg gcc tcc ctg aca atc tct ggg ctc cag gct 240
 Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala 80
 65 70 75
 gag gac gag gct gag tat tac tgc tgc tca tat gtt cat agt agc act 288
 Glu Asp Glu Ala Glu Tyr Tyr Cys Cys Ser Tyr Val His Ser Ser Thr 95
 85 90

aat tgg gtg ttc ggc gga ggg acc aag ctg acc gtc cta ggt cag ccc 336
 Asn Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gln Pro
 100 105 110

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 20 25 30

Val Pro Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu Met Ile
 35 40 45

Tyr Glu Gly Ser Lys Arg Pro Ser Gly Val Ser Asn Arg Phe Ser Gly
 50 55 60

Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala
 65 70 75 80

Glu Asp Glu Ala Glu Tyr Tyr Cys Cys Ser Tyr Val His Ser Ser Thr
 85 90 95

Asn Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gln Pro
 100 105 110

Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser
 115 120 125

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acc ctg tct ctc acc tgc act gtc tct gat gtc tcc atc aga agt cat 96
 Thr Leu Ser Leu Thr Cys Thr Val Ser Asp Val Ser Ile Arg Ser His
 20 25 30

tac tgg agt tgg ctc cgg cag ccc cca ggg aag gga ctg gag tgg att 144

Tyr Trp Ser Trp Leu Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 192
 ggg ttt atc tat gac ggt gcg aga acc agg ttc aac ccc tcc ctc agg
 Gly Phe Ile Tyr Asp Gly Ala Arg Thr Arg Phe Asn Pro Ser Leu Arg
 50 55 60
 240
 agt cga gtc tcc ctt tca atg gac cca tcc aag aag cag ttt tcc ctg
 Ser Arg Val Ser Leu Ser Met Asp Pro Ser Lys Lys Gln Phe Ser Leu
 65 70 75 80
 288
 aaa ctg ggg tct gtg acc gct gcg gac tcg gcc gtc tac tac tgt gcg
 Lys Leu Gly Ser Val Thr Ala Ala Asp Ser Ala Val Tyr Tyr Cys Ala
 85 90 95
 336
 aga gac gcg gat gga gat ggc ttc agc cca tac tac ttt ccc tac tgg
 Arg Asp Ala Asp Gly Asp Gly Phe Ser Pro Tyr Tyr Phe Pro Tyr Trp
 100 105 110
 366
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 Gly Gln Gly Ile Pro Val Ser Val Ser Ser
 115 120

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 Tyr Trp Ser Trp Leu Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Phe Ile Tyr Asp Gly Ala Arg Thr Arg Phe Asn Pro Ser Leu Arg
 50 55 60
 Ser Arg Val Ser Leu Ser Met Asp Pro Ser Lys Lys Gln Phe Ser Leu
 65 70 75 80
 Lys Leu Gly Ser Val Thr Ala Ala Asp Ser Ala Val Tyr Tyr Cys Ala
 85 90 95
 Arg Asp Ala Asp Gly Asp Gly Phe Ser Pro Tyr Tyr Phe Pro Tyr Trp
 100 105 110
 Gly Gln Gly Ile Pro Val Ser Val Ser Ser
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tcc ctg aga ctc tcc tgt gca gcc tct gga ttc acc ttc agt agc tat 96
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

act atg cac tgg gtc cgc cag gct cca ggc aag ggg ctg gag tgg gtg 144
Thr Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

gca ctt ata tca tat gat gga agc aat aaa tac tac gca gac tcc gtg 192
Ala Leu Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

aag ggc cga ttc gcc atc tcc aga gac aat tcc aag aac acg cta tat 240
Lys Gly Arg Phe Ala Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

ctg caa atg aac agc ctg aga gct gag gac acg gct gtg tat tac tgt 288
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

gcg aaa gat ggc cgg agt ggg agc tac gcc agg ttc gac ggt atg gac 336
Ala Lys Asp Gly Arg Ser Gly Ser Tyr Ala Arg Phe Asp Gly Met Asp
100 105 110

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Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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35 40 45

Ala Leu Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Ala Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

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Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Lys Asp Gly Arg Ser Gly Ser Tyr Ala Arg Phe Asp Gly Met Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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1 5 10 15

tcc ctg aga ctc tcc tgt gca gcc tct gga ttc acc ttt gat gat tat 96
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30

gcc ctg cac tgg gtc cgt caa gct cca ggg aag ggc ctg gag tgg gtc 144
Ala Leu His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

tca ggt att agt tgg gat agt ggt acc ata ggc tat gcg gac tct gtg 192
Ser Gly Ile Ser Trp Asp Ser Gly Thr Ile Gly Tyr Ala Asp Ser Val
50 55 60

aag ggc cga ttc acc atc tcc aga gac aac gcc aag aac tcc ctg tat 240
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65 70 75 80

ctg caa atg aac agt ctg aga gct gag gac acg gcc ttg tat tac tgt 288
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Leu Tyr Tyr Cys
85 90 95

gta aaa gat atg ggg tct tcg gta gtg gct acg tac aat gct ttt gat 336
Val Lys Asp Met Gly Ser Ser Val Val Ala Thr Tyr Asn Ala Phe Asp
100 105 110

atc tgg ggc caa ggg aca atg gtc acc gtc tct tca 372
Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120

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 35 40 45
 Ser Gly Ile Ser Trp Asp Ser Gly Thr Ile Gly Tyr Ala Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
 65 70 75 80
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Leu Tyr Tyr Cys
 85 90 95
 Val Lys Asp Met Gly Ser Ser Val Val Ala Thr Tyr Asn Ala Phe Asp
 100 105 110
 Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
 115 120

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 acc ctg tcc ctc acc tgc act gtc tct ggt ggc tcc ttc agt act tac 96
 Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Phe Ser Thr Tyr 30
 20 25
 tat tgg agc tgg atc cgg cag ccc cca ggg aag gga ctg gag tgg att 144
 Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile 45
 35 40
 ggg tat atc tat tac agt ggg aac acc aac tac aac ccc tcc ctc aag 192
 Gly Tyr Ile Tyr Tyr Ser Gly Asn Thr Asn Tyr Asn Pro Ser Leu Lys 60
 50 55
 agt cga gcc acc ata tca gta gac acg tcc aag aac cag ttc tcc ctg 240
 Ser Arg Ala Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu 80
 65 70 75
 aag ctg agc tct gtt acc gcc gca gac acg gcc gta tat tac tgt gcg 288
 Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala 95
 85 90

aga ctg cgt aac gat ggc tgg aat gat ggc ttt gat atc tgg ggc caa 336
 Arg Leu Arg Asn Asp Gly Trp Asn Asp Gly Phe Asp Ile Trp Gly Gln
 100 105 110

ggg aca atg gtc acc gtc tct tca 360
 Gly Thr Met Val Thr Val Ser Ser
 115 120

<210> 20
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<400> 20
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 20 25 30

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 35 40 45

Gly Tyr Ile Tyr Tyr Ser Gly Asn Thr Asn Tyr Asn Pro Ser Leu Lys
 50 55 60

Ser Arg Ala Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu
 65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
 85 90 95

Arg Leu Arg Asn Asp Gly Trp Asn Asp Gly Phe Asp Ile Trp Gly Gln
 100 105 110

Gly Thr Met Val Thr Val Ser Ser
 115 120

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 1 5 10 15

tcc ctg aga ctc tcc tgt gca gcc tct gga ttc acc ttc agt gac tat 96
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asp Tyr
 20 25 30

ggc atg cac tgg gtc cgc cag gct cca ggc aag ggg ctg gag tgg gtg 144
 13

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 gca gct ata tca tat gat gga agt aac aaa tac tat gca gac tcc gtg 192
 Ala Ala Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
 50 55 60
 aag ggc cga ttc tcc atc tcc aga gac aat tcc aac aat acg cta tat 240
 Lys Gly Arg Phe Ser Ile Ser Arg Asp Asn Ser Asn Asn Thr Leu Tyr
 65 70 75 80
 ctg caa atg agc acc ctg aga gct gag gac acg gct gtc tat ttc tgt 288
 Leu Gln Met Ser Thr Leu Arg Ala Glu Asp Thr Ala Val Tyr Phe Cys
 85 90 95
 gcg aga gat tcg gaa acg gca ata gcg gca gct gga cgg ttt gat atc 336
 Ala Arg Asp Ser Glu Thr Ala Ile Ala Ala Ala Gly Arg Phe Asp Ile
 100 105 110
 tgg ggc caa ggg aca atg gtc acc gtc tct tca 369
 Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
 115 120

<210> 22
 <211> 123
 <212> PRT
 <213> Homo sapiens

<400> 22
 Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asp Tyr
 20 25 30
 Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ala Ala Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Ser Ile Ser Arg Asp Asn Ser Asn Asn Thr Leu Tyr
 65 70 75 80
 Leu Gln Met Ser Thr Leu Arg Ala Glu Asp Thr Ala Val Tyr Phe Cys
 85 90 95
 Ala Arg Asp Ser Glu Thr Ala Ile Ala Ala Ala Gly Arg Phe Asp Ile
 100 105 110
 Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
 115 120

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 <213> Homo sapiens

<220>
 <221> CDS
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<400> 23
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Gln Val Lys Leu Leu Glu Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
1 5 10 15

tcg gtg atg gtc tcc tgc aag gct tct gga ggc acc ttc agc agc cat 96
Ser Val Met Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Ser His
20 25 30

act atc agc tgg gtg cgg cag gcc cct gga caa ggc ctt gag tgg atg 144
Thr Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

gga ggg atc acc cct atc ttt ggt aca gtg aac tac gca cag aag ttc 192
Gly Gly Ile Thr Pro Ile Phe Gly Thr Val Asn Tyr Ala Gln Lys Phe
50 55 60

cag ggc aga gtc acc att acc gcg gac gaa ccc acg agc aca gcc tac 240
Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Pro Thr Ser Thr Ala Tyr
65 70 75 80

atg gaa ctg agg agc ctg aca tct gac gac tcg ggc atc tat tac tgt 288
Met Glu Leu Arg Ser Leu Thr Ser Asp Asp Ser Gly Ile Tyr Tyr Cys
85 90 95

gcg aga gaa gat ggc act aca gta cca agt caa ccc ctt gag ttc tgg 336
Ala Arg Glu Asp Gly Thr Thr Val Pro Ser Gln Pro Leu Glu Phe Trp
100 105 110

ggc cag gga acc cgg gtc acc gtc tcc tct 366
Gly Gln Gly Thr Arg Val Thr Val Ser Ser
115 120

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Ser Val Met Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Ser His
20 25 30

Thr Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Gly Ile Thr Pro Ile Phe Gly Thr Val Asn Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Pro Thr Ser Thr Ala Tyr
65 70 75 80

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Met Glu Leu Arg Ser Leu Thr Ser Asp Asp Ser Gly Ile Tyr Tyr Cys
85 90 95

Ala Arg Glu Asp Gly Thr Thr Val Pro Ser Gln Pro Leu Glu Phe Trp
100 105 110

Gly Gln Gly Thr Arg Val Thr Val Ser Ser
115 120

<210> 25
<211> 363
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<213> Homo sapiens

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<222> (1)..(363)

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tcc ctg aga ctc tcc tgt tca gcc tct gga ttc acc ttc aat aaa tat 96
Ser Leu Arg Leu Ser Cys Ser Ala Ser Gly Phe Thr Phe Asn Lys Tyr
20 25 30
gca ata cac tgg gtc cgc cag gct cca ggg aag gga ctg gaa tat gtt 144
Ala Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Tyr Val
35 40 45
tca gct att agt agt aat ggg ggt aac aca tac tac gca gac tcc gtg 192
Ser Ala Ile Ser Ser Asn Gly Gly Asn Thr Tyr Tyr Ala Asp Ser Val
50 55 60
aag ggc aga ttc acc atc tcc aga gac aat tcc aag aac acg gtg tat 240
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Val Tyr
65 70 75 80
ctt caa atg agc agt ctg aga gct gag gac acg gct gtg tat tac tgt 288
Leu Gln Met Ser Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
gtt aga gga agt ggg agc tac tta gga tac tac ttt gac tac tgg ggc 336
Val Arg Gly Ser Gly Ser Tyr Leu Gly Tyr Tyr Phe Asp Tyr Trp Gly
100 105 110
cag gga acc ctg gtc acc gtc tcc tca 363
Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 26
<211> 121
<212> PRT
<213> Homo sapiens

<400> 26

Gln Val Lys Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
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 Ser Leu Arg Leu Ser Cys Ser Ala Ser Gly Phe Thr Phe Asn Lys Tyr
 20 25 30
 Ala Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Tyr Val
 35 40 45
 Ser Ala Ile Ser Ser Asn Gly Gly Asn Thr Tyr Tyr Ala Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Val Tyr
 65 70 75 80
 Leu Gln Met Ser Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Val Arg Gly Ser Gly Ser Tyr Leu Gly Tyr Tyr Phe Asp Tyr Trp Gly
 100 105 110
 Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 27
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 <213> Homo sapiens

<220>
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 <222> (1)..(366)

<400> 27
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 acg att acc tgt ggg gga tac aag att gga agt aaa agt gtc cac tgg 96
 Thr Ile Thr Cys Gly Gly Tyr Lys Ile Gly Ser Lys Ser Val His Trp 30
 20 25
 tac caa cag aag cca ggc cag gcc cct gta ttg gtc gtc tat gag gat 144
 Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Val Tyr Glu Asp 45
 35 40
 tcc tac cgg ccc tca gag atc cct gag cga ttc tct ggc tcc aac tct 192
 Ser Tyr Arg Pro Ser Glu Ile Pro Glu Arg Phe Ser Gly Ser Asn Ser 60
 50 55
 ggg aac atg gcc acc ctg acc atc acc ggg gtc gaa gcc ggg gat gag 240
 Gly Asn Met Ala Thr Leu Thr Ile Thr Gly Val Glu Ala Gly Asp Glu 75 80
 65 70
 gcc gac tac tac tgt cag gtg tgg gat aat act aat gat cag acg ata 288
 Ala Asp Tyr Tyr Cys Gln Val Trp Asp Asn Thr Asn Asp Gln Thr Ile 90 95
 85

ttc ggc gga ggg acc aag ctg acc gtc cta cgt cag ccc aag gct gcc 336
 Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Arg Gln Pro Lys Ala Ala
 100 105 110

ccc tcg gtc act ctg ttc ccg ccc tcc tct 366
 Pro Ser Val Thr Leu Phe Pro Pro Ser Ser
 115 120

<210> 28
 <211> 122
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 <213> Homo sapiens

<400> 28
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 1 5 10 15

Thr Ile Thr Cys Gly Gly Tyr Lys Ile Gly Ser Lys Ser Val His Trp
 20 25 30

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Val Tyr Glu Asp
 35 40 45

Ser Tyr Arg Pro Ser Glu Ile Pro Glu Arg Phe Ser Gly Ser Asn Ser
 50 55 60

Gly Asn Met Ala Thr Leu Thr Ile Thr Gly Val Glu Ala Gly Asp Glu
 65 70 75 80

Ala Asp Tyr Tyr Cys Gln Val Trp Asp Asn Thr Asn Asp Gln Thr Ile
 85 90 95

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Arg Gln Pro Lys Ala Ala
 100 105 110

Pro Ser Val Thr Leu Phe Pro Pro Ser Ser
 115 120

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 <211> 366
 <212> DNA
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<220>
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 <222> (1)..(366)

<400> 29
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 Gln Val Lys Leu Leu Glu Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1 5 10 15

tca gtg aag gtc tcc tgc aag gtt tcc gga tac acc ctc act gaa tta 96
 Ser Val Lys Val Ser Cys Lys Val Ser Gly Tyr Thr Leu Thr Glu Leu
 20 25 30

tcc atg cac tgg gtg cga cag gct cct gga aaa ggg ctt gag tgg atg 144
 18

Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Met
 35 40 45
 gga ggt ttt gat cct gaa gat ggt gaa aca atc tac gca cag aaa ttc 192
 Gly Gly Phe Asp Pro Glu Asp Gly Glu Thr Ile Tyr Ala Gln Lys Phe
 50 55 60
 cag ggc aga gtc acc atg acc gag gac aca tct aca gac acg gcc tac 240
 Gln Gly Arg Val Thr Met Thr Glu Asp Thr Ser Thr Asp Thr Ala Tyr
 65 70 75 80
 atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg tat tac tgt 288
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 gag aca ggt ctg agg tcg tac aac tat ggt cgt aac ctt gac tat tgg 336
 Glu Thr Gly Leu Arg Ser Tyr Asn Tyr Gly Arg Asn Leu Asp Tyr Trp
 100 105 110
 ggc cag gga acc ctg gtc acc gtc tcc tca 366
 Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 30
 <211> 122
 <212> PRT
 <213> Homo sapiens

<400> 30
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 1 5 10 15
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 20 25 30
 Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Met
 35 40 45
 Gly Gly Phe Asp Pro Glu Asp Gly Glu Thr Ile Tyr Ala Gln Lys Phe
 50 55 60
 Gln Gly Arg Val Thr Met Thr Glu Asp Thr Ser Thr Asp Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Glu Thr Gly Leu Arg Ser Tyr Asn Tyr Gly Arg Asn Leu Asp Tyr Trp
 100 105 110
 Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 31
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 <212> PRT
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1 5 10

<210> 32
<211> 14
<212> PRT
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<400> 32
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1 5 10

<210> 33
<211> 5
<212> PRT
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<400> 33
Gly Tyr Ser Trp Arg
1 5

<210> 34
<211> 5
<212> PRT
<213> Homo sapiens

<400> 34
Ser Tyr Ala Met His
1 5

<210> 35
<211> 16
<212> PRT
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<400> 35
Asp Ile Ser Tyr Ser Gly Ser Thr Lys Tyr Lys Pro Ser Leu Arg Ser
1 5 10 15

<210> 36
<211> 17
<212> PRT
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<400> 36
Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val Lys Gly
1 5 10 15

<210> 37
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<400> 37
Ala Thr Trp Asp Asp Gly Leu Asn Gly Pro Val
1 5 10

<210> 38
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<212> PRT
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<400> 38
Ala Ala Trp Asp Asp Ser Leu Asn Gly Trp Val
1 5 10

<210> 39
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<400> 39
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1 5 10

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<400> 41
Gly Ser His Gln Arg Pro Ser
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<210> 42
<211> 7
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<400> 42
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1 5

<210> 43
<211> 16
<212> PRT
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<210> 44
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 1 5 10 15

<210> 45
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<400> 45
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<210> 46
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 <212> PRT
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<400> 46
 Asp Ala Asp Gly Asp Gly Phe Ser Pro Tyr Tyr Phe Pro Tyr
 1 5 10

<210> 47
 <211> 12
 <212> PRT
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<400> 47
 Leu Arg Asn Asp Gly Trp Asn Asp Gly Phe Asp Ile
 1 5 10

<210> 48
 <211> 14
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<400> 48
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<210> 49
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<400> 49
Glu Asp Gly Thr Thr Val Pro Ser Gln Pro Leu Glu Phe
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<400> 50
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<210> 51
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<400> 51
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- <210> 52
<211> 9
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<400> 52
Cys Ser Tyr Val His Ser Ser Thr Asn
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<400> 56
Asp Tyr Ala Leu His
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<400> 57
Ser His Tyr Trp Ser
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<210> 58
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<400> 58
Thr Tyr Tyr Trp Ser
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<400> 59
Asp Tyr Gly Met His
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<400> 60
Ser His Thr Ile Ser
1 5

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Lys Tyr Ala Ile His
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<211> 5
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<400> 62
Glu Leu Ser Met His
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<210> 63
<211> 17
<212> PRT
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<400> 63
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1 5 10 15

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<211> 17
<212> PRT
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<400> 64
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<400> 65
Gly Ile Thr Pro Ile Phe Gly Thr Val Asn Tyr Ala Gln Lys Phe Gln Gly
1 5 10 15

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<211> 14
<212> PRT
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Thr Gly Thr Ser Ser Ala Ile Gly Asn Tyr Asn Phe Val Pro
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<210> 67
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<400> 67
Gly Gly Tyr Lys Ile Gly Ser Lys Ser Val His
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<210> 68
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<400> 68
Glu Gly Ser Lys Arg Pro Ser
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<210> 71
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<212> PRT
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<400> 71
Phe Ile Tyr Asp Gly Ala Arg Thr Arg Phe Asn Pro Ser Leu Arg Ser
1 5 10 15

<210> 72
<211> 17
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<400> 72
Ala Ile Ser Ser Asn Gly Gly Asn Thr Tyr Tyr Ala Asp Ser Val Lys Gly
1 5 10 15

<210> 73
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<400> 73
 Gly Phe Asp Pro Glu Asp Gly Glu Thr Ile Tyr Ala Gln Lys Phe Gln Gly
 1 5 10 15

<210> 74
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 1 5 10 15

<210> 75
 <211> 30
 <212> PRT
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<400> 75
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Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 20 25 30

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<210> 78
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 1 5 10 15

Lys Gly

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Ser

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<400> 83
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<400> 85
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<400> 86
 Ser His Thr Ile Ser
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<210> 87
 <211> 17
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 Gly Ile Thr Pro Ile Phe Gly Thr Val Asn Tyr Ala Gln Lys Phe Gln Gly
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<210> 88
 <211> 17
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<400> 88
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 1 5 10 15

<210> 89
 <211> 12
 <212> PRT
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<400> 89
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<210> 90
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<400> 90
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<400> 91
Ser Tyr Ala Met His
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<400> 92
Ser Tyr Ala Ile Ser
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Ser Tyr Gly Met His
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Glu Leu Ser Met His
1 5

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1 5 10 15

<210> 96
<211> 17
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Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr Ala Gln Lys Phe Gln Gly
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<210> 97
<211> 17
<212> PRT
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<400> 97
Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val Lys Gly
1 5 10 15

<210> 98
<211> 17
<212> PRT
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Gly Phe Asp Pro Glu Asp Gly Glu Thr Ile Tyr Ala Gln Lys Phe Gln Gly
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<210> 99
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<210> 100
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<210> 101
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<400> 101
Tyr Asp Ser Asp Arg Pro Ser
1 5

<210> 102
<211> 9
<212> PRT
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Gln Val Trp Asp Ser Ser Ser Asp His
1 5

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Ser Tyr Ala Met Ser
1 5

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Ser Tyr Gly Met His
1 5

•<210> 105
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<400> 105
Asp Tyr Ala Met His
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Ser Tyr Tyr Trp Ser
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<211> 17
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<400> 107
Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys Gly
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<210> 108
<211> 17
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<400> 108
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1 5 10 15

<210> 115
<211> 11
<212> PRT
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<400> 115
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1 5 10

<210> 116
<211> 7
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<400> 116
Glu Asp Ser Tyr Arg Pro Ser
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<210> 117
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Oligonucleotide

<400> 117 18
cgctgtgccc ccagaggt

<210> 118
<211> 22
<212> DNA
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<220>
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Oligonucleotide

<400> 118 22
ggccgcaaat tctatttcaa gg

<210> 119
<211> 18
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<220>
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Oligonucleotide

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<213> Homo sapiens

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Ala Leu His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Gly Ile Ser Trp Asp Ser Thr Ser Ile Gly Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Leu Tyr Tyr Cys
85 90 95

Val Lys Asp Met Gly Ser Ser Val Val Ala Thr Tyr Asn Ala Phe Asp
100 105 110

Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
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115

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<400> 127
 Lys Tyr Ala Ile His
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